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Terms	Documents
xml near4 page near4 tree	2

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<u>L3</u>	xml near4 page near4 tree	2	<u>L3</u>
<u>L2</u>	L1 and xml near4 page near4 tree	1	<u>L2</u>
<u>L1</u>	html near4 page near4 tree	28	<u>L1</u>

END OF SEARCH HISTORY

**End of Result Set**☐

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L2: Entry 1 of 1

File: PGPB

Jan 31, 2002

DOCUMENT-IDENTIFIER: US 20020013782 A1

TITLE: Software program for internet information retrieval, analysis and presentation

Detail Description Paragraph (10):

[0044] When searching for targeted information on a web page, the intelligent agent Bot 10 matches patterns against the hierarchical tree structure of the document representing the page in HTML, XML, WML, or other presentation or formatting language. This makes the intelligent agent Bot resilient to changes on the pages.

## End of Result Set

☐

Generate Collection

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L2: Entry 1 of 1

File: PGPB

Jan 31, 2002

PGPUB-DOCUMENT-NUMBER: 20020013782

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020013782 A1

TITLE: Software program for internet information retrieval, analysis and presentation

PUBLICATION-DATE: January 31, 2002

## INVENTOR-INFORMATION:

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APPL-NO: 09/ 783318 [PALM]

DATE FILED: February 15, 2001

## RELATED-US-APPL-DATA:

Application is a non-provisional-of-provisional application 60/183366, filed February 18, 2000,

INT-CL: [07] G06 F 17/30

US-CL-PUBLISHED: 707/10; 707/3

US-CL-CURRENT: 707/10; 707/3

REPRESENTATIVE-FIGURES: 1

## ABSTRACT:

A method and system for generating reports relating to various web sites. Each report will be tailored to the type of web sites examined as well as the particular client. A site structure description language as well as content standardization rules will be employed by one or more intelligent agent Bots to analyze the information provided on the web pages. This information will be transmitted to a data warehouse for analysis by a report analysis system. A report presentation system along with a user graphical interface will allow each particular client to view their particular reports. Among other features, these reports would indicate the position of the web site and a particular search engine as well as the number of clicks it would take to order a particular product or service.

## CORRESPONDING APPLICATION

[0001] The present application is entitled to the benefit of Provisional Patent Application Ser. No. 60/183,366 filed on Feb. 18, 2000.



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L1: Entry 13 of 28

File: USPT

Nov 6, 2001

US-PAT-NO: 6314424

DOCUMENT-IDENTIFIER: US 6314424 B1

TITLE: System and method for dynamically expanding and collapsing a tree view for an HTML web interface

DATE-ISSUED: November 6, 2001

## INVENTOR-INFORMATION:

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Tung; Randy Yuan-Yi	San Jose	CA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
International Business Machines Corporation	Armonk	NY				02

APPL-NO: 09/ 164442 [PALM]

DATE FILED: September 28, 1998

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/10; 707/100, 707/103, 707/513, 707/517, 707/531, 709/218, 709/224, 345/340, 345/357

US-CL-CURRENT: 707/10; 345/854, 707/100, 707/513, 707/517, 707/531, 709/218, 709/224

FIELD-OF-SEARCH: 707/8, 707/10, 707/100, 707/200, 707/201, 707/203, 707/531, 707/513, 707/517, 707/2.3, 707/4, 707/5, 707/104, 707/501, 709/212, 709/216, 709/237, 709/248, 709/310, 709/218, 709/224, 345/340, 345/357

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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<input type="checkbox"/>	<u>5615325</u>	March 1997	Peden	395/326
<input type="checkbox"/>	<u>5801702</u>	September 1998	Dolan et al.	345/357
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<input type="checkbox"/>	<u>6211877</u>	April 2001	Steele et al.	345/357

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FOREIGN-PAT-NO

PUBN-DATE

COUNTRY

US-CL

9-146962

June 1997

JP

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Kleinberg, Jon M., "Authoritative Sources in a Hyperlinked Environment", Journal of the ACM, vol. 46, No. 5, Sep. 1999, pp. 604-632.\*

T. Munzner et al., "Visualizing the Structure of the World Wide Web in 3D Hyperbolic Space", Symposium on the Virtual Reality Modeling Language, San Diego, Dec. 14-15, 1995: VRML '95.

K. Wittenburg et al., "Visual Focusing and Transition Techniques in a Treeviewer for Web Information Access", IEEE Symposium on Visual Languages, Isle of Capri, Italy, Sep. 23-26, 1977.

ART-UNIT: 212

PRIMARY-EXAMINER: Alam; Hosain T.

ASSISTANT-EXAMINER: Alam; Shahid

ABSTRACT :

The present invention provides a system and method for expanding and collapsing a tree view from a web interface by using HTML to build the visual representation of the web server's information structure, which has the capability to preserve previous tree expansion states in the stateless web HTML environment. In a method according to the present invention, a request comes in from a client browser which contains a universal resource locator (URL). The web server passes the URL to the tree HTML page generation engine to generate the collapsible/expandable tree. The tree HTML page generation engine server will call the corresponding query modules according to the information passed in from the URL. A linked list is generated according to the results returned from one of the query modules. The linked list is then passed into the tree HTML page generation engine. The tree HTML page generation engine generates the HTML page containing nodes. Each node has an embedded URL associated with it and contains a special encoding to memorize the tree expansion state information. The generated tree view is then returned to the web server and then to the browser.

13 Claims, 10 Drawing figures



Generate Collection

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L1: Entry 13 of 28

File: USPT

Nov 6, 2001

DOCUMENT-IDENTIFIER: US 6314424 B1

TITLE: System and method for dynamically expanding and collapsing a tree view for an HTML web interface

Abstract Text (1):

The present invention provides a system and method for expanding and collapsing a tree view from a web interface by using HTML to build the visual representation of the web server's information structure, which has the capability to preserve previous tree expansion states in the stateless web HTML environment. In a method according to the present invention, a request comes in from a client browser which contains a universal resource locator (URL). The web server passes the URL to the tree HTML page generation engine to generate the collapsible/expandable tree. The tree HTML page generation engine server will call the corresponding query modules according to the information passed in from the URL. A linked list is generated according to the results returned from one of the query modules. The linked list is then passed into the tree HTML page generation engine. The tree HTML page generation engine generates the HTML page containing nodes. Each node has an embedded URL associated with it and contains a special encoding to memorize the tree expansion state information. The generated tree view is then returned to the web server and then to the browser.

Brief Summary Text (14):

In a method according to the present invention, a request comes in from a client browser which contains a universal resource locator (URL) and information about the request such as encoding for the state information. The web server passes the additional information to the tree HTML page generation engine to generate the collapsible/expandable tree. The tree HTML page generation engine will call the corresponding query modules according to the information passed in from the URL. A linked list is generated according to the results returned from one of the query modules. The linked list is then passed back to the tree HTML page generation engine. The tree HTML page generation engine turns the linked list into an HTML page containing nodes and leaves. Each node has an embedded URL associated with it and contains a special encoding to memorize the tree expansion state information. The generated tree view is then returned to the web server and then to the browser.

Detailed Description Text (4):

FIG. 2 is a flow diagram illustrating the general steps of the present invention. In a first step, illustrated by box 200, a client browser makes a request to the web server. The request from the client browser contains a universal resource locator (URL). The request could be a URL typed in by the user to initiate the first contact with the web server or a URL encoded in a previously generated tree view node in the web page. At 202, the web server passes the URL to the tree HTML page generation engine to generate the collapsible/expandable tree. The generated tree serves as a traversing tool to the existing information system. The tree HTML page generation engine server will call the corresponding query modules according to the information passed in from the URL at 204. Next, at 206, a linked list is generated according to the results returned from one of the query modules. This linked list contains all the data needed for constructing a tree representation for the information (such as a database, file system, network domains and the like). The linked list is then passed into the tree HTML page generation engine at 208. The tree HTML page generation engine generates the HTML page containing nodes and leaves. As will be seen with reference to FIGS. 4(a)-4(d), the nodes are actually the "+" (plus) sign and the "-" (minus) sign which can be clicked by users to collapse or expand a branch. Each node has an embedded URL associated with it and contains a special encoding to memorize the tree expansion state information. This information will get updated and carried over to the next generated tree (web page) to preserve the previous expansion state. The leaves (entries in the tree view without plus or minus signs) are also URLs, which point to actual data that the user wishes to receive. An example of a portion of an HTML page generated is illustrated in FIG. 5. The generated tree view is then returned to the web server at 212 and then to the browser at 214.

Detailed Description Text (5):

A system implementing a preferred present embodiment is shown and described in connection with FIG. 3. The client, or web browser 300 can be any type or level of web browser. The web browser 300 sends a request over path 302 to the web or application server 304. The

Record ID: 304 extracts the URL from the web browser 300 and sends a message to the web server 306 to the tree HTML page generator 308. Here, the page generator 308 invokes the query module 312 to access the information system the user seeks information from. The information system can be, for example, a database 314 or a file system 316. A linked list 320 is returned back to the tree HTML page generator, which is then converted into the HTML page 326 that includes the tree expansion state information. The linked list is comprised of a list of pointers to the information. Lastly, the HTML page generation engine 308 returns the page 326 back to the web server which in turn, sends the page back to the web client 300. examples of the visual representation are shown in FIGS. 4(a) through 4(d). As mentioned previously, leaves in the tree view are indicated with plus and minus signs, while the leaves are indicated by line access in the tree. FIG. 4(a) shows the initial representation of the page generated by the HTML page generation engine 308.

#### CLAIMS:

7. A method for generating a tree view for a web browser comprising the steps of:

receiving a request for information at a web server from a client browser, said request containing a URL for the information;

invoking an HTML page generation engine to build an HTML page for visual presentation of the information;

executing a query module from the page generation engine to an information system to search for the requested information;

building a linked list from the results of the query module;

generating an HTML page from the link listed information, said HTML page having embedded pointers to tree expansion state information; and

returning the HTML page to the client browser.

12. A computer product comprising:

a computer usable medium; and

a computer readable code embodied on the computer usable medium, said readable code configured to cause the computer to construct a dynamic tree view from a linked list by embedding tree expansion states into an HTML page.



Generate Collection

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L1: Entry 19 of 28

File: USPT

Dec 14, 1999

DOCUMENT-IDENTIFIER: US 6003046 A

TITLE: Automatic development and display of context information in structured documents on the world wide web

## CLAIMS:

2. The method of claim 1 wherein said structured document comprises a plurality of pages in the form of HTML files, the pages being in a tree structure wherein each page descends from a root page through one or more parents and said automatically developing step comprises:

automatically developing information identifying parents of said selected hypertext page.

5. The method of claim 1 wherein said structured document comprises a plurality of pages in the form of HTML files, the pages being in a tree structure wherein each page descends from a root page through one or more parents and said automatically developing step comprises:

automatically developing information identifying other hypertext pages descended from a parent of said selected hypertext page.



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Generate Collection

Print

L1: Entry 22 of 28

File: USPT

Apr 27, 1999

DOCUMENT-IDENTIFIER: US 5897622 A

TITLE: Electronic shopping and merchandising system

Detailed Description Text (32):

Referring now to FIG. 3b, in another preferred embodiment, the dynamic page generator 125 includes a page processor 140, a query module 142 and a template parser 144. As before, the dynamic page generator builds a HTML page for display on a browser 122, 123 using templates. Similarly, the page processor 140 communicates with the query module 142 as needed to obtain, extract and format information from the database 121 for display on the browser 122, 123. However, in this preferred embodiment, the template parser 144 obtains a template from the HTML structures 126, parses this template to create a syntax tree and delivers the resulting syntax tree to the page processor 140 to create HTML for display on the browser 122, 123. As is well known in the art, a syntax tree is a common representation used in the construction of parsers and compilers to simplify the process of transforming an input file into a desired output. Thus, a syntax tree is an internal representation of the original input file. For more information on syntax trees, please refer to "Compilers principles, techniques and tools", by Alfred V. Aho, ISBN 0-201-10038-6.



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L1: Entry 22 of 28

File: USPT

Apr 27, 1999

US-PAT-NO: 5897622

DOCUMENT-IDENTIFIER: US 5897622 A

TITLE: Electronic shopping and merchandising system

DATE-ISSUED: April 27, 1999

## INVENTOR-INFORMATION:

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Cohen; Michael Ari	San Francisco	CA		
Lorton; Michael	Redmond	WA		
Stein; Gregory J.	Redmond	WA		

## ASSIGNEE-INFORMATION:

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Microsoft Corporation	Redmond	WA			02

APPL-NO: 08/ 732012 [PALM]

DATE FILED: October 16, 1996

INT-CL: [06] G06 F 17/60, G06 F 13/00, G06 F 15/16

US-CL-ISSUED: 705/26; 705/27, 707/3, 707/104, 707/501, 707/513

US-CL-CURRENT: 705/26; 705/27, 707/104.1, 707/3, 707/501.1, 707/513

FIELD-OF-SEARCH: 705/26, 705/27, 705/30, 705/35, 705/39, 707/1, 707/2, 707/3, 707/4, 707/5, 707/6, 707/10, 707/100, 707/102, 707/103, 707/104, 707/501, 707/509, 707/513, 395/200.31, 395/200.33, 395/200.47, 395/200.49

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>5708825</u>	January 1998	Sotomayor	395/762
<input type="checkbox"/>	<u>5754772</u>	May 1998	Leaf	395/200.33
<input type="checkbox"/>	<u>5761656</u>	June 1998	Ben-Shachar	707/4
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Andraka; "Put Your Database on the Web"; Data Based Advisor; v14 n6; p. 12(3); Jun. 1996; Dialog: File 275, Acc#01941476.

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